

# CYTOLOGY OF *IGHERMIA* WIKL. (ASTERACEAE-INULEAE) WITH NOTES ON ITS SYSTEMATIC POSITION

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## Abstract

The chromosome number of *Ighermia pinifolia* (Maire & Wilczek) Wiklund has been determined for the first time. The chromosome number that was found to be  $2n=14$  supports the earlier proposed systematic position of the genus as the sister-group of *Asteriscus* and *Nauplius* of the Inuleae.

## Introduction

*Ighermia*, a monotypic genus endemic to southern Morocco was described by Wiklund (1983) for *Asteriscus pinifolius* Maire & Wilczek (1935). Wiklund placed this species in a separate genus because it could not be shown to be most closely related to the other *Asteriscus* species, but rather to some other genus or group of genera. Wiklund later (1985, 1987) found that *Asteriscus* and *Nauplius* form a monophyletic group diagnosed by a single synapomorphy, i. e. the crested ray-floret epidermis cells. Anderberg (1991) corroborated Wiklund's hypothesis of a close phylogenetic relationship between *Asteriscus* and *Nauplius*, but also found an additional synapomorphy for the group, viz. the characteristically low chromosome numbers ( $2n=10, 12, 14$ ). The only other genera of the tribe with  $2n=14$ , i.e. *Anisopappus* (Auquier and Renard 1975) and *Anvillea* (Anderberg 1982) were found to be more distantly related. Anderberg (1991) also found that *Ighermia* is the sister-group of *Asteriscus* and *Nauplius*. This relationship was supported by the shared presence of a continuous sclerenchymatic tissue in the cypsel wall, a multi-state feature that was represented with an autapomorphic conditional in *Asteriscus*. The chromosome number of *Ighermia*, which was potentially informative, was at that time unknown, and therefore coded as a question-mark in the cladistic analysis.

A chance to obtain the necessary cytological data needed to test the hypothesis presented itself, when a recently collected specimen of *Ighermia pinifolia*, with

mature cypselas, was presented as a gift to the herbarium in Stockholm (S), by Dr. D. Podlech, Munich.

### Material and Methods

Mature cypselas taken from "Podlech No. 49163, S." germinated successfully in the greenhouses of the Department of Botany, University of Stockholm.

Root tips were treated with 0.2% colchicine for 2 hours in refrigerator, fixed in Carnoy's solution (99% ethanol and glacial acetic acid 3:1), stained in aceto-orcein, squashed, and mounted in euparal.

### Results and Discussion

The chromosome number of *Ighermia pinifolia* proved to be  $2n=14$ , which is the same as the prevailing chromosome number in *Nauplius*. The present result supports the hypothesis that *Ighermia* is the sister-group of *Nauplius* and *Asteriscus* (Anderberg 1991), and the low chromosome numbers constitute a further synapomorphy for the three genera (Fig. 1).

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### References

- Anderberg, A. A. 1982. The genus *Anvillea* (Compositae). *Nord. J. Bot.* 2: 297—305.
- Anderberg, A. A. 1991. Taxonomy and phylogeny of the tribe Inuleae (Asteraceae). *Pl. Syst. Evol.* 176: 75—123.
- Auquier, P. and R. Renard 1975. Nombres chromosomiques de quelques Angiospermes du Rwanda, Burundi et Kivu (Zaire) 1. *Bull. Jard. Bot. Nation. Belg.* 45: 421—445.
- Maire, R. and E. Wilczek 1935. *Sertulum austro-maroccanum austerum*. *Bull. Soc. Hist. Nat. Afr. N.* 26: 128.
- Wiklund, A. 1983. *Ighermia*, a new genus of the Asteraceae-Inuleae. *Nord. J. Bot.* 3: 443—446.

Wiklund, A. 1985. The genus *Asteriscus* (Asteraceae-Inuleae). *Nord. J. Bot.* 5: 299—314.

Wiklund, A. 1987. The genus *Nauplius* (Asteraceae-Inuleae). *Nord. J. Bot.* 7: 1—23.

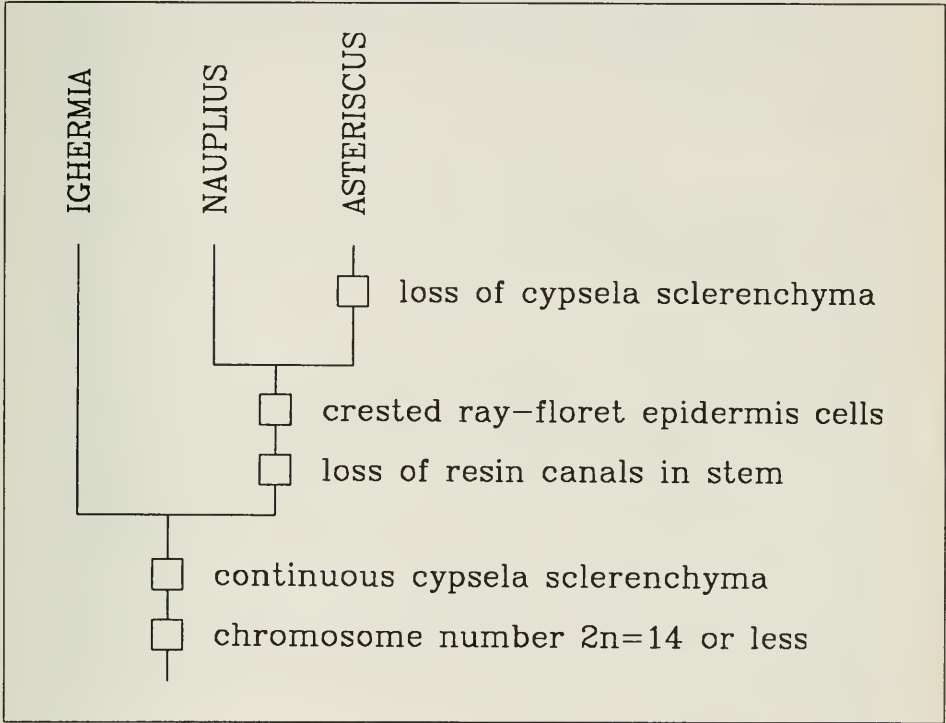


Fig. 1. Cladogram showing a revised character distribution for the three genera of the *Asteriscus* group. Redrawn from Anderberg (1991).